

NEWS REPORT

National Academy of Sciences National Research Council

VOLUME V

March-April 1955

NUMBER 2

Dissemination of Information By the Academy-Research Council

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THE discovery and diffusion of knowledge are the traditional functions of a university, and it can therefore easily be seen why the National Academy of Sciences-National Research Council is often compared to a great university. Viewed as an educational institution the Academy-Research Council is singularly distinguished. It assembles experts in many disciplines to consider problems of broad scientific and technical implications. These men constitute on the one hand an inspiring faculty and on the other a gifted student body, for each learns from the other and in turn shares his own knowledge. But the Academy-Research Council also shares with the universities the responsibility for disseminating knowledge through the country, and indeed throughout the world, far beyond the limits even of that wide circle of individuals who participate directly in its work.

The means by which this is accomplished make an interesting account quite apart from the varied scientific and technical subjects involved. This article will give typical examples of the many media for disseminating information that are part of the current Academy-Research Council program.

Personal contacts among those who participate in the activities of the Academy-Research Council are no doubt the most effective though intangible means by which information is disseminated. Reflecting for a moment on the nature and frequency of gathering of scientists and engineers under Academy-Research Council auspices will suggest the fruitful interchanges that they make possible.

Committee Meetings

Some 3,000 individuals participate annually in the activities of the Academy-Research Council through membership on its committees, boards, panels, etc. The record of meetings that appears in each issue of NEWS REPORT shows that there is a year-round average of more than two meetings a day. An estimate has recently been made that between 8,500 and 10,000 man-days of time, most of which is devoted to meetings and conferences, are contributed to the United States Department of Defense and the Atomic Energy Commission alone through the Academy-Research Council. The total contribution of time and services by scientists and engineers throughout the country to the Academy-Research Council program is much larger.

Conferences and Symposia

Thousands of individuals hear scientific papers presented under the auspices of the Academy-Research Council at conferences and symposia usually open to the scientific public. Chief among these are the scientific sessions of the Academy meetings. About 40 papers were presented at the Annual Meeting held last April in Washington and 60 were presented at the Autumn Meeting held at Columbia University in November. The program of the Annual Meeting also included three symposia: "High Energy Particle Accelerators," "The Structure and Function of Nucleic Acids," and "The Scientific Aspects of the International Geophysical Year." Other examples of conferences and symposia are:

	Attendance
Highway Research Board, 34th Annual Meeting	1,275
Conference on Electrical Insulation, 23d Annual Meeting	247
American Geophysical Union, 35th Annual Meeting	1,000
Agricultural Research Institute, 3d Annual Meeting	125
Building Research Institute	140
Third National Conference on Clay Minerals	200
Woods Hole Oceanographic Convocation	250
Conference on Plastics in Building	564
Conference on Modular Coordination in Building	225
Conference on Radiocarbon Dating	40
Symposium on Atherosclerosis	60
Symposium on Laboratory Propagation and Detection of Hepatitis	30

Academy-Research Council Lecture Series

In 1951 a series of afternoon lectures was inaugurated that have been warmly regarded and well attended by the scientific public in the Washington area. Twenty-five lectures have been given by distinguished scientists from the United States and abroad. Lecturers during this academic year have been Drs. John Turton Randall, Wheatstone Professor of Physics at King's College in the University of London; Joel H. Hildebrand, Emeritus Professor of Chemistry at the University of California; André M. Lwoff, Head of the Department of Microbial Physiology, Institut Pasteur; George W. Corner, Director of the Depart-

ment of Embryology, Carnegie Institution of Washington; and Wendell M. Stanley, Director of the Virus Laboratory and Professor of Biochemistry at the University of California.

Lectures and Addresses by Academy-Research Council Representatives

Many requests are received by the Academy-Research Council for representation at dedications, inaugurations, graduation exercises, and other formal occasions. These are often met by the President of the Academy, but many others have contributed their time to this important responsibility. Among these occasions in 1954 were:

Meeting of the National Health Council
Science Teachers Association, 2nd Annual Convention
Dedication of the Institute of Microbiology at Rutgers University
Dedication of the American Bar Center, Chicago
Dedication of the College of Letters and Sciences, University of California at Riverside
Address at the Conference on the Unity of Knowledge, Columbia University
Meeting of the Washington Academy of Science
Seventh Pakistan Science Conference, Bahawalpur
Lecture at the National Science Foundation
Lecture at the Industrial College of the Armed Forces

Nearly every activity of the Academy-Research Council involves preparation of a report and most of these are published. This kind of dissemination of information lends itself well to quantitative description. The current catalogue of publications lists about 400 titles, totaling over 60,000 pages, of which 62 titles (14,250 pages) appeared during 1954. Sixteen of these publications, containing 9,000 pages, were published for the Academy-Research Council by commercial publishers or university presses. The rest were published by the Academy-Research Council. In addition 14 periodicals were published whose total volume in 1954 exceeded 7,000 pages.

In the following paragraphs these publications have been classified according to the type of information they disseminate rather than from the point of view of their subjects. They range from news letters reporting developments in the organization

and administration of research to distinguished scientific journals such as the *Proceedings* of the Academy. A few examples of each type will show the great variety of subjects involved.

Technical Reports and Conclusions of Committees

The conclusions of nearly every committee assignment are embodied in a more or less formal report that may be unpublished or may be published either in a professional journal or as a book or monograph. Among the latter are the following:

Treatise on Marine Ecology and Paleocology
Principles and Procedures for Evaluating the
Safety of Intentional Chemical Additives in
Foods

Recommended Dietary Allowances
Report of the Committee on Battery Additives
Recommended Chlorine Residuals in Water Supplies for the Armed Services

The scientific data contained in the unpublished reports are not necessarily lost to use. The reports are usually mimeographed for limited distribution and in time may find their way wholly or in part into the literature. Almost none of the work of the Academy-Research Council is copyrighted and responsible quotation is encouraged.

Abstracts and Compilations of Scientific Information

The Academy-Research Council maintains a number of interesting and valuable services for the organization and dissemination of research results. One unusual example is the project of the Committee on Spectral Absorption Data to put abstracts of data on coded key-sort cards. Cards on 400 compounds have been printed to date and are being sold by the National Bureau of Standards. Among the many other examples are:

Summary Tables of Biological Tests (bi-monthly)
Highway Research Abstracts (11 issues per year)
Prevention of Deterioration Abstracts (monthly)
Geological Abstracts (quarterly)
Abstracts of Research Projects (in Annual Report of Committee on Growth)
Nuclear Data Cards (monthly)
Annual Report of Committee on Measurement of Geologic Time

Digest of the Literature on Dielectrics (annually)
Tables of Chemical Kinetics
Standard Values in Nutrition and Metabolism

Contributed Papers Published in Periodicals

Many of the technical papers prepared by or under the auspices of the Academy-Research Council committees are published in the professional journals. Three decades or so ago this was the usual device for distributing information about the Academy-Research Council undertakings and led to the Reprint and Circular Series, but during the past decade it has not often been used. Recently a collection of papers prepared at the suggestion of the Subcommittee on Nuclear Constants of the Committee on Nuclear Science was reprinted from the *Reviews of Modern Physics* and distributed by the Academy-Research Council. Many of the reports of the Atomic Bomb Casualty Commission appear in the medical journals.

The Academy-Research Council itself sponsors several scientific periodicals that publish worthy scientific and technical information whether carried out under Academy-Research Council auspices or otherwise. These are the following:

	Circulation
Proceedings of the National Academy of Sciences (monthly)	2,100
Journal of Mathematical Tables and Other Aids to Computation (quarterly)	1,000
Transactions of the American Geophysical Union (bi-monthly)	5,800
Journal of Artificial Limbs (quarterly) ..	3,600

Surveys and Directories

Perhaps one of the most significant classes of service the Academy-Research Council renders to research generally is the survey or directory type of publication that enables individuals to discover what and where work or services relevant to their own scientific work may be in progress. These may consist of critical surveys of the status and progress of certain fields, as for example the *Survey of the Literature on Dental Caries*, the *Survey of Neurobiology*, and the *Annual Review of Nuclear Science*, or they may consist of abstracts or listings

by project of the work of laboratories, such as the *Survey of Food and Nutrition Research in the United States, 1952-53*.

Conventional directories and handbooks are also published including the following:

- Directory of Industrial Research Laboratories of the United States
- Scientific and Technical Societies of the United States and Canada
- Departments of Geological Science in Educational Institutions of the United States and Canada
- A Handbook of Laboratory Animals
- Directory of Hydrobiological Laboratories and Personnel in North America
- Roster of Disaster Personnel
- International Directory of Anthropologists

News Letters

The intricate organization and administration of research today has created a need for news reports of varied sorts. The Academy-Research Council publishes its own NEWS REPORT, the periodical in which this article appears, with the aim of informing those associated with its work or interested in its program with a broad and reasonably current picture of its affairs. This edition will be distributed in about 4,500 copies throughout the United States and abroad. News letters are prepared periodically by the Chairmen of at least two divisions of the Academy-Research Council reporting Division affairs in more detail than would be appropriate for NEWS REPORT. Other services of this kind are:

Circulation

Geological News Letter of the American Geological Institute	14,000
Disaster Research News Letter	400
Building Science Reporter	2,000
Science in UNESCO	350

Bibliographies

Specialized bibliographies are important aids in research and several have been published by the Academy-Research Council. One of the most extensive of these is the *Bibliography of Scientific, Medical, and Technical Books Published in the United States of America, 1930-1944* published in two volumes (totaling 1,628 pages) including the supplement covering 1945-1948. A 550-page trio of annotated bibliographies is now in press containing 4,000 references to land aspects of coral atolls

and low coral islands and the botany and vegetation of the tropical Pacific islands. Among other bibliographies published recently are the following:

- Bibliography of Submarine Technical Literature, 1557-1953
- Bibliography of Genetic Neurobiology
- The Effect of Water on Bitumin-Aggregate Mixtures

Bibliographic information regarding infrared absorption is printed and coded on punched cards and distributed in connection with the infrared absorption data cards mentioned above.

Annual Reports

The Annual Reports of the Academy-Research Council constitute a brief year-by-year record of the accomplishments of its units. More detailed information is contained in the Annual Reports of the Divisions themselves, some of which contain complete records of scientific conferences as, for example, a symposium on water resources held at an annual meeting of the Division of Earth Sciences. Some units other than Divisions produce annual reports for general distribution, many of which contain scientific information of interest. For example the Annual Report of the Committee on Growth contains abstracts of research in progress supported by the American Cancer Society, and the introduction presents the Committee's considered review of the status of research.

There are still other means by which information is made widely available by the Academy-Research Council. Not infrequently a news release is prepared and issued to the press and radio, for example when an honor has been conferred by the Academy for distinguished work in science. The biographical memoirs in presenting brief but inspiring accounts of the lives of deceased members of the Academy are a contribution to the understanding of the cultural values of science.

Many other examples of dissemination of information could be mentioned, but the examples cited suffice to show that the Academy-Research Council plays a vital role in the important task of diffusing new knowledge among men.

Manpower Legislation in the Eighty-fourth Congress

M. H. TRYTTEN

Director, Office of Scientific Personnel

IT NOW seems certain that the present session of Congress will pass legislation modifying present laws relating to Selective Service and the Military Reserve System. If so, this legislation may well remain on the statute books without much change for a very long time, unless a major mobilization occurs.

Legislative proposals have been under discussion for several months, with the Office of Defense Mobilization and the Department of Defense accepting major responsibility for the development of an Administration program. Such a program has been submitted to the Congress by the Department of Defense on behalf of the Administration and has appeared in proposed legislation as House of Representatives Bill No. 2967. Hearings on this bill have been held for the House Armed Services Committee by a Subcommittee headed by Representative Overton Brooks of Louisiana. A substantial array of organizations and individuals have presented testimony on the various aspects of this bill. Other bills have also been introduced. One of these has been sponsored by the American Legion and concerns itself mostly with proposals for universal military training. Another bill was introduced by Representative Carl Hinshaw of California and calls for the setting up of a National Manpower Board, with special responsibility for scientific and specialized personnel, as well as for personnel potentially valuable to the nation because of their capabilities.

It now seems likely that the legislation as reported to the floor of the House by the Armed Services Committee will be a new version rewritten completely by the House Committee. What will appear in such legislation is consequently conjectural at

this time. One can only judge from such indications of interest on the part of the members of the House Armed Services Committee as were made manifest in their interrogation of witnesses.

It can be stated first that at no time in the past has the awareness on the part of the Congress of the role of science and technology in national strength been so clearly reflected. For this reason, it seems probable that special procedures relating to such personnel will receive close attention. While the Administration program as reflected in H. R. 2967 was not specific enough on such matters, there had been general agreement between the Office of Defense Mobilization and the Department of Defense, according to reliable reports, on proposals for handling this problem. These proposals were essentially two.

The first of these, while it related to the National Guard and the organized Reserve, had implications for training in the specialized areas. This was a provision under which young men, up to nineteen, could enlist in the National Guard or the Reserve, subject to six months basic training in the Army or Marine Corps. They would then be remanded to the Guard or the Reserve for continuous part-time training for a period of years. During this time, however, they could if they wished, attend college or university. Upon completion of scientific or engineering or other specialized training to a level of significance for the needs of the nation, they could be screened out of the Ready Reserve and into the Standby Reserve.

The second provision would make it possible for an individual who had elected to be deferred to secure his scientific or other training and had progressed to the point

where he would be recognized as a specialist in an area of strategic importance to the nation to undergo six months of basic training followed by assignment to the Standby Reserve, which would carry with it no further obligation for training nor for recall to duty, except under conditions of general mobilization.

These two provisions had developed during the past few months as integral parts of the Administration program. Whether the Congress will write such provisions into law in exactly their present conceptual form or not cannot be stated, but it seems that the problem will be taken care of by provisions similar to those here described.

Aside from support of these provisions, testimony has generally strongly emphasized the need of a manpower authority to deal with policies and procedures relating to specialized personnel. According to the testimony of the Honorable Carter L. Burgess, Assistant Secretary of Defense for Manpower and Personnel, and Dr. Arthur S. Flemming, Director of the Office of Defense Mobilization, both the Department of Defense and the Office of Defense Mobilization recognized this need. The difference of opinion arises as to whether this authority should be constituted at the Cabinet level reporting directly to the President or set up in the Department of Defense. The testimony was overwhelmingly in favor of the former.

There remain, however, many questions to be resolved which may have substantial bearing on both the processes of education and of utilization of persons with specialized training. Most of these are closely related to the proposals dealing with the Reserve. The attempt to establish a strong Reserve program necessarily means that eventually millions of people will have some degree of obligation for training or service at recurring intervals, possibly weekly, although in other cases, possibly only annually. The discharge of these obligations must be done at suitable places. The availability in any locality of opportunities to discharge reserve training obligations will no doubt be for each individual a factor in his choice of an institution for his higher education, or a location for employment.

These implications appear not to have been considered by agencies concerned with legislation and will undoubtedly loom larger and larger in the minds of Congressmen as they consider the mobilization problems and develop legislation.

It is expected that legislation will be passed before the end of the summer. It is not entirely necessary that this occur, since the Selective Service Act which does expire could merely be extended in time so as to give more time for the consideration of legislation. Present indications are, however, that a bill will be passed before the summer is over.

SCIENCE NEWS

INTERNATIONAL UNION OF BIOLOGICAL SCIENCES TWELFTH GENERAL ASSEMBLY

The Twelfth General Assembly of the International Union of Biological Sciences (IUBS) will be held in Rome, April 12-15. Recommendations for the administrative and programmatic reorganization of IUBS will be discussed and acted upon at this meeting.

In conjunction with the General Assembly there will be seven symposia on "Problems of International Concern in the Life Sciences" covering the following topics: 1) Standards, units, symbols, and terms; 2) Research organizations and support; 3) Teach-

ing and training; 4) Publication; 5) Supplies and depositories; 6) International congresses and conferences; and 7) International cooperative projects.

Paul Weiss, Chairman of the Division of Biology and Agriculture will serve as Chairman of the United States delegation. Dr. Weiss is also Chairman of the Policy Board of IUBS and Vice President of its Sections of Cell Biology and Embryology. The other two members of the delegation are Ralph E. Cleland, Dean of the Graduate School at Indiana University and Vice President of IUBS, and H. Bentley Glass, Professor of Biology at Johns Hopkins University.

ACADEMY TO ADVISE ON NATIONAL POLICY

As an outgrowth of recent conferences between President Detlev W. Bronk and members of the Administration, the National Academy of Sciences has been requested to advise regarding the formulation of Federal Government policy on loyalty requirements in connection with the awarding of grants and contracts in support of unclassified scientific research. The scope of the request from the White House and plans for providing the advice requested are contained in the following exchange of letters between Sherman Adams, The Assistant to the President, and President Bronk.

THE WHITE HOUSE Washington

Dear Dr. Bronk:

The continued sound and healthy development of our Nation and the protection of the national interests depend to a great degree on the maintenance at full strength of the activities of those who are devoting their lives to scientific research designed to improve the health and well-being of all our people. The role of the Federal Government in support of scientific research has increased to the point where it now sponsors a substantial part of the research activities in the Nation.

In the administration of Government grants and contracts to private institutions for the support of unclassified scientific research, there have been a very small number of occasions when questions have arisen regarding the loyalty of individuals whose work is in connection with these grants and contracts.

When these cases come to the attention of the Government agency administering the program, a problem arises in their handling, inasmuch as it does not involve security but concerns an area outside established Government-wide security procedures for its employees. It is of concern to all Government agencies which support or sponsor such unclassified research. It is of tremendous importance, in the handling of this problem, to avoid misunderstandings between scientists and the Government which might impair the cordial relationships which are so vital to the national welfare, misunderstandings which could lead to a loss of valuable benefits from research. It is equally important that people outside the scientific community understand the nature of the problem, and that their confidence in the Government's handling of this important phase of the public trust be maintained. No one will question the fundamental principle that only those who are loyal to our Government should be beneficiaries of Government grants-in-aid or contracts.

It has been said, "It is a privilege, not a right, to work for the Government." The Government nevertheless recognizes that in the administration of this principle in relation to grants and contracts, it is acting, not apart from the people, but as and for the people. Governmental procedures must be designed to protect the reputation and standing in the community of innocent persons.

In the application of these principles the Government expects the cooperation of the grantee or contractor as the case may be. At the same time the Government must take every precaution to guard against harming unjustly any member of the community. Toward this end we are constantly seeking to improve our procedures and at the present time are evaluating various proposals for so doing.

It seems to us that these questions relating to loyalty can best be resolved if scientists, through a representative group such as the National Academy of Sciences, can counsel with the Government on its policy in this matter. Calling upon the Academy in this way is in keeping with its Congressional charter to advise the Government in the formulation of policy to the end that the scientific resources of our country may be fully and effectively utilized. The President has asked me to express to you his strong personal interest in this matter.

I hope that it will be possible for the Academy to take this problem under immediate consideration in order that we may have the benefit of your early advice. If you will get in touch with me, I will arrange a meeting at which these problems can be discussed.

Sincerely,

Sherman Adams.

Dr. Detlev W. Bronk, President
The National Academy of Sciences
Washington 25, D. C.

NATIONAL ACADEMY OF SCIENCES

Dear Governor Adams:

I have given careful thought to your recent letter concerning the problems that derive from the appraisal of loyalty to our Government as a basis for the award of grants and contracts in support of unclassified scientific research.

Following the subsequent helpful conference I had with you and other members of the Administration who are intimately concerned, I consulted with many of my colleagues in the National Academy of Sciences. They agree with you and me that it will be desirable for me to appoint a committee of scientists and others to consider the problems in question and to advise with you in the near future. A wise governmental policy relating to these matters is essential if a wholesome environment is to be assured for the furtherance of science and our national welfare. Accordingly, the Academy welcomes the opportunity to aid in the resolution of these troublesome issues.

We warmly appreciate your thoughtful concern for the maintenance of conditions necessary for the satisfactory conduct of research. We are also gratified to know of the President's strong personal interest in this matter.

Yours sincerely,
Detlev W. Bronk,
President.

The Honorable Sherman Adams
The White House
Washington, D. C.

Following this exchange of letters, President Bronk appointed a Committee on Loyalty Requirements for Unclassified Government Research Grants and Contracts composed of the following members:

J. A. STRATTON, Vice President, Massachusetts Institute of Technology, *Chairman*
ROBERT F. BACHER, California Institute of Technology
LAIRD BELL, Chicago attorney
WALLACE O. FENN, University of Rochester
ROBERT F. LOEB, Columbia University
E. BRIGHT WILSON, Harvard University
HENRY M. WRISTON, President of Brown University

MILITARY ANESTHESIA

The anesthetic management of the wounded soldier involves problems that are relatively uncommon in civilian practice. The military casualty may be in poor physical condition due to fatigue, exposure, and the stress of combat, and it may be necessary to care for him under adverse conditions for some time before he can be brought to surgery. Peacetime offers few opportunities to try out the new and sometimes conflicting theories that have been proposed, and it is also difficult to introduce and evaluate new doctrines in time of war. As a result knowledge of military anesthesia has tended to lag by contrast with advances in resuscitation and in surgical techniques.

At the request of the Department of the Army, the newly reorganized Subcommittee on Anesthesia has undertaken to prepare a review of clinical problems in this field, and to outline a program of research in anesthesia oriented to the needs of the Armed Forces. As a starting point, the Subcommittee devoted its February meeting to a symposium in which emphasis was placed on the problems of anesthesia in relation to cardiovascular function.

LECTURE BY GEORGE W. CORNER

Twins and twinning have long fascinated mankind from Mayan sculptors and the unknown originator of the Romulus-Remus myth to the audience addressed on January 18 by George W. Corner, Vice President of the Academy and Director of the Department of Embryology, Carnegie Institution of Washington, who spoke on "The Embryology of Human Twins and Other Multiple Births." Dr. Corner's lecture was the fourth in the Academy-Research Council series and featured a remarkable series of illustrations of embryos in the Carnegie Institution's unique collection—among them the earliest known human stages, a 2-cell and an 8-cell embryo.

There are two classes of multiple births: those from fertilization of two or more ova, resulting in fraternal twins no more similar than non-twin siblings; and identical twins evidently resulting from a single egg. Direct evidence of multiple ovulations can be obtained during surgery, and the limited data available indicate that two-thirds of human twin births are fraternal pairs. Single-egg twins may originate in several ways, based on evidence from animal experiments and study of placentae and embryonic membranes. Dr. Corner described the three supposed modes of origin based on indirect evidence.

1) By separation of the first two (or two sets of the first few) blastomeres. In rats and rabbits one of the first two cells, when isolated, can develop into a fully formed individual with a complete set of membranes. Several studies of humans suggest that one-third of identical twin births arise in this way.

2) By division of the embryo at the blastocyst stage, with the result that the twins share a chorion but each has its own amnion and yolk sac. Human embryos of 17 days were shown that illustrate this type.

3) By separation of embryonic masses at the germ disk stage, after amniotic cavity formation; the twins having all membranes in common. This type of twinning is the rule in development of the 9-banded armadillo (producing litters of identical quadruplets) and a South American relative

(producing litters of 6-9 identical young). A pair of 24-day human embryos is the earliest known that illustrates this condition.

Among human triplets, quadruplets, quintuplets, and alleged sextuplets every conceivable combination of fraternal and identicals occur. In three of the 48 known sets of quintuplets all five children were identical. Among them, according to convincing genetic data rather than study of membranes, are the famous Dionnes. In two other sets of quintuplets all children survived; in both cases at least two eggs appear to have been involved.

Dr. Corner concluded with an appeal to physicians to add to the very limited knowledge of the embryology of multiple births by helping collect pertinent data and specimens.

UNESCO ADVISORY COMMITTEE ON NATURAL SCIENCES

The second meeting of the International Advisory Committee on Research in the Natural Sciences program of Unesco will be held at Pallanza, Italy, April 20 and 21. The primary function of this Committee is to advise the Director General on effective ways to implement the Natural Sciences program adopted by the General Conference of Unesco. The following countries and international organizations are currently represented on the Committee: Australia, Brazil, Denmark, Egypt, France, India, Israel, Japan, Mexico, United Kingdom, United States, Yugoslavia, Union of International Engineering Associations, Council of International Organizations of Medical Sciences, and the International Council of Scientific Unions.

Items to be considered at the forthcoming meeting include, among others, criteria for recognition of the international character of research institutions seeking Unesco aid; a proposal from the International Council of Scientific Unions concerning the creation of a federation of astronomical and geophysical services; and suggestions for the preparation of Unesco's program for 1957-58. Wallace W. Atwood, Jr., Director of the Office of International Relations is the United States member of the Committee and will attend the meeting at Pallanza.

ANNUAL MEETING NATIONAL ACADEMY OF SCIENCES

The ninety-second Annual Meeting of the National Academy of Sciences will be held at the Academy building, April 25-27. Sessions for the presentation of scientific papers will be held on Monday, April 25, and Wednesday, April 27. There will be a brief business meeting before the first scientific session on Monday morning. Tuesday will be devoted to the election of officers and new members and to reports and general Academy business. The scientific sessions will be open to the public.

In addition to the contributed papers, the scientific sessions will include three or four symposia of invited papers, including a symposium on weather prediction and one on sound and its perception.

On Monday evening there will be a special program for the presentation of Academy medals. A reception for the medalists, members, their wives, and guests, and a program of scientific demonstrations and exhibits will follow the formal presentations. The exhibits will be provided primarily by Academy members and their colleagues, and the aim of the program is to exhibit and demonstrate significant current scientific and technical developments.

The Academy dinner for members and guests will be held Tuesday evening, April 26, at the Statler Hotel. On Wednesday evening a buffet supper for members only will be served in the auditorium of the Academy building to give an opportunity for informal discussion of Academy affairs and other matters of current interest.

PARTICIPATION IN EDUCATIONAL EXCHANGE PROGRAM

Paul Weiss, Chairman of the Division of Biology and Agriculture and Member of the Rockefeller Institute for Medical Research, will go to Germany this spring at the invitation of the U. S. Department of State to participate in the Department's International Educational and Cultural Exchange Program for furthering a mutual exchange of ideas among scientists. He will give several lectures on biology at research and educational institutions in Frankfurt, Göttingen, and München, and will confer with leaders in the field.

LECTURE BY
WENDELL M. STANLEY

The fifth address in the current Academy-Research Council series was presented on February 15 by Wendell M. Stanley, Director of the Virus Laboratory and Professor of Biochemistry at the University of California, who spoke on "The Nature of Living Systems." His lecture centered about the viruses as possible transitional forms constituting a gradual spectrum from the nonliving to the living.

Aristotle, by intuitive reasoning, had postulated that the boundary between living and nonliving was without clear demarcation. Only after the development of the microscope and discovery of bacteria did some basis exist for the theory. Bacteria were considered to be true living forms, but at least the idea developed that reproductive elements smaller than bacteria might exist. Their existence was eventually demonstrated when the filterable tobacco mosaic virus was isolated and shown to be capable of transmitting disease.

Dr. Stanley was the first to crystallize a virus, and this work was cited when he received the Nobel prize. The fact that viruses could be isolated and crystallized in "chemically pure" form raised doubts about their being true living forms. Their apparent homogeneity left no room for the differentiated structures normally associated with living systems.

Recently, however, the use of the electron microscope, coupled with physical and enzymatic dissociative methods, has demonstrated hitherto unsuspected structure in the larger viruses. Some of the bacteriophages are quite complicated, having a large head and a tadpole-like tail with a frayed end. The tail has been shown to have an external sheath of protein and a core of nucleic acid, while the head contains a skein of fibrous material.

Dr. Stanley said we now have reasonable evidence that Aristotle was correct in assuming a gradual transition between living and nonliving systems. The viruses furnish the link. Some are homogeneous structures similar to nonliving protein molecules; others are heterogeneous structures akin to living bacteria.

Dr. Stanley is now attempting to modify the chemistry of the viruses in order to produce heritable changes (mutations). If this can be achieved, much will be discovered about one of the key phenomena of living systems, self-duplication.

FINN JONASSEN

It is with deep regret that the Division of Engineering and Industrial Research records the death of Finn Jonassen on February 19, 1955. For the past nine years Dr. Jonassen has served as Technical Director of the Academy-Research Council Committees on Ship Steel, Ship Structural Design, and Residual Stresses, all of which are advisory to the inter-agency Ship Structure Committee.

It was largely through Dr. Jonassen's effective technical administration that the main outlines of the reasons for ship fractures have become known; that mitigation, if not complete prevention, of such casualties can now be accomplished; and that the questions still to be answered have been defined.

AMERICAN GEOLOGICAL INSTITUTE

The Executive Committee of the American Geological Institute met at the Academy-Research Council on January 6. The major objective of the Committee this year is to raise funds to defray the operating expenses of the Institute. Five hundred dollars was appropriated to help continue the activities of the Scientific Manpower Commission.

At the invitation of the Engineers Joint Council the Institute is cooperating in planning a Nuclear Congress to be held in Cleveland, Ohio, December 11-17. The Institute has appointed the following committee to represent the member societies: Paul Kerr, Columbia University, *Chairman*; Brian Mason, American Museum of Natural History; Roland Beers, private consultant of Troy, N. Y.; and Roy Law, Texas Oil Company, New York City. John R. Dunning, a nuclear physicist at Columbia University, is chairman of the General Committee for the Congress, and Donald L. Katz, a chemical engineer at the University of Michigan, is chairman of the Program Committee.

ACADEMY REPRESENTED AT GAUSS CELEBRATION

Robert S. Mulliken, Professor of Physics at the University of Chicago and newly appointed Science Attache at the American Embassy in London, represented the National Academy of Sciences at the celebration commemorating the one-hundredth anniversary of the death of the illustrious mathematician and physicist, Karl Friedrich Gauss, held at the University of Göttingen on February 19. Invitations to the ceremony were issued jointly by the University and the Academy of Sciences of Göttingen. Dr. Mulliken, on behalf of the National Academy, conveyed greetings from President Detlev W. Bronk to the University and to the Academy of Göttingen.

WILLIAM J. ROBBINS VISITS PAKISTAN

At the invitation of the Pakistan Association for the Advancement of Science, William J. Robbins, Director of the New York Botanical Garden and Professor of Botany at Columbia University, visited Pakistan from January 18 to February 6 and represented the National Academy of Sciences at the Seventh Pakistan Science Conference held at Bahawalpur, January 21-26.

The conference was attended by delegates from Canada, Egypt, Germany, Great Britain, India, Indonesia, Japan, People's Republic of China, Turkey, United States, and the U.S.S.R., as well as by a representative from the Middle East Science Cooperation Office of Unesco.

For the presentation of scientific papers the conference was organized into the following sections: 1) Agriculture, animal husbandry, and forestry; 2) Biology, zoology, botany, and entomology; 3) Chemistry and applied chemistry; 4) Education, sociology, and psychology; 5) Engineering, irrigation, water power, and hydraulics; 6) Geology, geography, and anthropology; 7) Medicine and veterinary sciences; and 8) Physics, mathematics, and statistics. Three symposia were also arranged on "Problems of Arid Zones with Special Reference to West Pakistan," "Antibiotics in Medical and Veterinary Practice," and "Problems of Food Production in Pakistan."

In addition to attending the Pakistan Sci-

ence Conference, Dr. Robbins visited colleges and research institutions in Lahore, Rawalpindi, and Karachi. He delivered eight lectures to groups of faculty and students and made contacts with many Pakistanis who had studied in the United States, with Americans who are Fulbright Fellows or are working under Foreign Operations Administration auspices, and with leaders of scientific work in Pakistan. To Dr. M. Afzal Husain, President of the Pakistani Academy of Sciences, Dr. Robbins delivered a letter of greeting from President Detlev W. Bronk and a copy of the original signature book of the National Academy.

COMMITTEE ON INTERNATIONAL SCIENTIFIC UNIONS

Ten chairmen of United States National Committees of international scientific unions met at the Academy-Research Council on March 9 and 10. These chairmen constitute the Committee on International Scientific Unions which advises the President of the Academy and in turn the U. S. Department of State on the nature and extent of United States participation in the International Council of Scientific Unions (ICSU). The purpose of the March meeting was twofold: 1) To discuss various matters relating to international science with the Bureau of ICSU which was meeting concurrently (*see separate item, p. 28*); and 2) to brief United States delegate nominees to the Seventh General Assembly of ICSU to be held at Oslo, August 8-13.

Among the several resolutions passed by the Committee as guidance for the United States delegation the following one may be of interest to readers of NEWS REPORT.

The Committee on International Scientific Unions recommends that the United States delegation to the Seventh General Assembly of ICSU advocate the formation of an ICSU special committee to plan a symposium on the organization of international science to be held at the time of the 1958 General Assembly, in the hope that the discussions at this symposium may lead to the establishment of a permanent group to continue studies of this important problem which arises from the steady growth of science and of the demands placed upon international scientific organizations.

The above resolution has been forwarded to the Secretary General of ICSU with the

suggestion that time be provided at the Oslo meeting for consideration of this proposal.

The following members of the Committee were present at the March 9-10 meeting:

LLOYD V. BERKNER, President, Associated Universities, Inc., *Chairman pro tem.*

WALLACE W. ATWOOD, JR., Chairman, USA National Committee, International Geographical Union

ROBERT BRODE, Chairman, USA National Committee, International Union of Pure and Applied Physics

HUGH L. DRYDEN, Chairman, USA National Committee, International Union of Theoretical and Applied Mechanics

DAVID HARKER, Chairman, USA National Committee, International Union of Crystallography

JAMES B. MACELWANE, S. J., Chairman, USA National Committee, International Union of Geodesy and Geophysics

J. J. NASSAU, Chairman, USA National Committee, International Astronomical Union

FREDERICK D. ROSSINI, Chairman, USA National Committee, International Union of Pure and Applied Chemistry

MARSHALL H. STONE, Chairman, USA National Committee, International Mathematical Union

PAUL WEISS, Chairman, USA National Committee, International Union of Biological Sciences

HARRY WELLS, Vice Chairman, USA National Committee, International Scientific Radio Union

Others attending the meeting included delegate nominees and representatives of the U. S. Department of State and the National Science Foundation.

VISIT OF SIR HAROLD HIMSWORTH

During the week of February 13, Sir Harold Himsworth, Secretary of the British Medical Research Council, visited Washington for conferences with the various agencies of the Government concerned with research in medicine and public health.

On the invitation of the President of the Academy, Sir Harold attended the regular meeting of the Governing Board of the Academy-Research Council. On the following day he was the guest of the Division of Medical Sciences and conferred with members of the staff on such problems of mutual interest as the adoption of unified medical doctrines in military and civil defense, the status of research in tropical medicine, the preservation of whole blood, the control of serum hepatitis, and the standardization of criteria for plasma volume expanders.

INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS

The twelfth meeting of the Bureau of the International Council of Scientific Unions (ICSU) was held in Washington, D. C., March 7-12 (*see* News Report, Vol. V, No. 1). The following members of the Bureau were in attendance: B. Lindblad (Sweden) *President*, A. von Muralt (Switzerland) *Past President*, H. Solberg (Norway) *Vice President*, Colonel E. Herbays (Belgium) *Vice President*, A. V. Hill (Great Britain) *Secretary General*, and W. Albert Noyes, Jr. (U. S. A.) *Treasurer*. Ronald Fraser, Administrative Secretary of ICSU, also attended. Two members of the Bureau, J. Pérès (France) and N. Kameyama (Japan), were not present due to pressure of other duties.

Although attendance at the Bureau meeting was limited to members only, two half-day sessions were scheduled for discussions between Bureau members and representatives of the U. S. Department of State, the National Science Foundation, and the Academy-Research Council. At one of these joint sessions the chairmen of 10 United States National Committees of ICSU Unions participated. Topics discussed at this joint session included: 1) Increased financial support of ICSU and its constituent Unions, 2) policy concerning admission of new unions, and 3) the relative roles of ICSU and Unesco in furthering international scientific programs. The exchange of views on these important problems proved extremely worthwhile and helped to crystallize current thinking on the future role of ICSU and its constituent scientific unions.

The busy schedule of business sessions which characterized the week of Bureau meetings was interrupted by several official and social functions. These included a dinner tendered by the President of the Academy, a luncheon provided by the National Science Foundation, an informal buffet supper at a Washington home, and a luncheon at Blair House given by the Honorable David McK. Key, Assistant Secretary of State. At the close of the meeting, the members of the Bureau enjoyed a two-day excursion to Charlottesville and Monticello as guests of the University of Virginia.

RESEARCH ON THE EDUCATIONAL EXCHANGE PROGRAM

The Committee on International Exchange of Persons is bringing to a close the first part of its research project on educational exchange with countries of the Near East and South Asia. The report of the first part of this study is now being prepared by Gordon Macgregor, Research Associate of the Committee. Principal attention has been focused on the problems of formulating exchange program objectives and of planning appropriate supporting activities.

An extension of the original grant from the Ford Foundation has enabled the Committee to undertake the second and concluding part of the project: a study of the characteristics of the exchange scholars and of their experiences as grantees, with a view to improving the techniques of selecting and utilizing specialized persons as exchange professors or research scholars.

INTERNATIONAL SYMPOSIUM

The Wenner-Gren Foundation for Anthropological Research in collaboration with the National Science Foundation has organized an international symposium on "Man's Role in Changing the Face of the Earth" to be held at Princeton, N. J., June 16-22. Co-chairmen of the symposium are Carl O. Sauer, University of California; Marston Bates, University of Michigan; and Lewis Mumford, University of Pennsylvania.

Eighty scholars have been invited to participate, 17 of whom are from India, Egypt, Israel, France, Belgium, Germany, Great Britain, and Canada. Those from the United States are drawn from 39 institutions in 18 states, Hawaii, and the District of Columbia.

The following fields of study will contribute to the theme of the symposium: agriculture, anthropology, architecture, biology, botany, climatology, conservation, demography, ecology, economics, engineering, forestry, geochemistry, geography, geology, geomorphology, history, mathematics, medicine, meteorology, mining, pedology, philosophy, physics, psychology, regional planning, sociology, and zoology.

The symposium is based upon 52 background papers that are being prepublished and circulated for study in advance of the symposium. Two sessions will be held each day to discuss the problems raised by the inventory papers or developed in the course of the meeting. The sessions are wholly for discussion; no papers will be read.

Additional details regarding the scope of the papers and the over-all plan of the symposium may be obtained from William L. Thomas, Jr., Assistant Director of Research, Wenner-Gren Foundation for Anthropological Research, Inc., 14 East 71st Street, New York 21, N. Y.

SUMMARY STATEMENT ON ARTIFICIAL SWEETENERS

Pursuant to an Agreement between the U. S. Food and Drug Administration and the National Academy of Sciences dated February 17, 1954, the Food and Nutrition Board has given consideration to the nutritional and public health problems involved in the growing distribution of foods containing non-nutritive artificial sweeteners in place of sugar and other nutritious sweeteners. Specific attention has been given to saccharin and the cyclohexylsulfamates (Sucaryl) because they are the non-nutritive sweeteners most widely used at present. The Board submitted the following conclusions:

1) Recognition is given to the usefulness of safe artificially sweetened foods for the special dietary purposes of individuals who must restrict their intake of sugar, e.g., diabetics.

2) There is no clear evidence that the availability to, and consumption by, the general public of artificially sweetened foods would be effective for purposes of body weight reduction or control. Any decrease in caloric content of foods achieved with the displacement of small amounts of sugar by artificial sweeteners is of value for weight control only as it may aid in the supervised and controlled reduction of caloric intake from the total diet.

3) The physiological harmlessness of saccharin at levels of maximum probable intakes has been established.

4) The physiological harmlessness of the cyclohexylsulfamates (Sucaryl) at levels of maximum probable intakes has not been assured. The primary probable hazard appears to derive from the use of Sucaryl in soft drinks available for general public consumption.

The Board recommended that non-nutritive sweeteners be used only for special dietetic purposes, and that necessary precautions governing their preparation and distribution be formulated.

GRANTS FOR CANCER RESEARCH

This year the Committee on Growth marks its tenth anniversary as advisor to the American Cancer Society on its grant-in-aid program. The awards made by the Society on the Committee's recommendation for the coming fiscal year totaled \$2,270,210 and will provide support for 305 projects in 120 institutions located in 36 states and the District of Columbia.

During its first decade the program has been expanded by orderly steps to more than three times its initial level. The increase this year was approximately 13 percent. In all, 2,382 grants have been made, comprising 721 separate projects and 1,661 extensions of support, in the total amount of \$16,736,708. Not included in these figures are the programs of fellowships and scholar grants, also administered on the Committee's recommendation. The current awards under these programs will be announced at a later date.

CIVIL DEFENSE FOODS ADVISORY COMMITTEE

At the request of the U. S. Food and Drug Administration, the Academy-Research Council has established a Civil Defense Foods Advisory Committee to study the vulnerability of the food processing and warehousing industries to attack or sabotage by biological, chemical, or radiological agents. The Committee will be concerned also with methods and facilities for sanitizing or decontaminating food plants, equipment, and products in a civil defense emergency.

The first meeting of the Committee, held in Washington on February 18 and 19, was

devoted largely to briefings by representatives of Government agencies. The initial task of the Committee will be to obtain and review all pertinent information and in this connection the Committee is looking forward to the cooperation of others in the food and allied industries as well as in civil and military defense agencies.

The membership of the Committee is as follows:

ROY C. NEWTON, Swift and Company, *Chairman*
JOHN S. ANDREWS, General Mills, Inc.
ROBERT R. BALDWIN, General Foods Corporation
GAIL M. DACK, University of Chicago
H. C. DIEHL, Refrigeration Research Foundation
ARNOLD H. JOHNSON, National Dairy Research Laboratories
EMIL M. MRÁK, University of California at Davis
GEORGE W. PUTNAM, Creamery Package Manufacturing Company
FRANK L. GUNDERSON, Technical Consultant, Washington, D. C., *Executive Secretary*

STAFF APPOINTMENTS

The advisory Committee on International Technologic Assistance announced the appointment of **Donald Brewer Harris** as Electronics Specialist. Mr. Harris assumed his duties on February 14 and on the 19th left for India where he joined Charles S. Piggot in the survey of national industrial research organizations. Mr. Harris is currently on leave from his position as Assistant Director of the Electronics Research Laboratory at Stanford University.

Walter M. Bejuki has been appointed a Research Associate in the Prevention of Deterioration Center. A biologist and biochemist, Dr. Bejuki assumed his duties on February 7. Before coming to the Academy-Research Council, Dr. Bejuki was a research biologist in agricultural chemical screening and development with the Pennsylvania Salt Manufacturing Corporation of Philadelphia.

The Building Research Advisory Board announced the appointment of **Homer J. Smith** as Staff Architect for the Federal Construction Council. Mr. Smith is assuming the duties of **William S. Brown** who is on a special assignment in connection with a 4-month study being made for the Federal Housing Administration. Mr. Smith is a practicing architect in the Washington area.

James H. Defandorf (Col. A.U.S. ret.), a bacteriologist and pharmacologist, has been appointed Research Analyst by the Division of Biology and Agriculture to work on the Handbook of Biological Data. Following his retirement from the Chemical Corps of the Army, Dr. Defandorf served as consultant on chemical and biological warfare defense with the Federal Civil Defense Administration before coming to the Academy-Research Council.

NATIONAL SCIENCE FOUNDATION FELLOWSHIP PROGRAM

For the past four years the Academy-Research Council through the Fellowship Office has been cooperating with the National Science Foundation on the fellowship program supported by the Foundation. The Fellowship Office receives, processes, and evaluates the graduate and postdoctoral National Science Foundation Fellowship applications each year.

The week of February 21 marked the culmination of this year's program. Approximately 3,400 graduate and postdoctoral applications were handled. From February 21 to 25, Screening Panels made up of sixty-six scientists from educational institutions throughout the United States met to evaluate the graduate fellowship applications. Panel members are selected on the basis of their continued creative scientific productivity, their demonstrated interest in the advanced training of young scientists, and their broad and well-balanced competence, experience and stability. The fields of anthropology and psychology, biological sciences, chemistry, earth sciences, engineering, mathematics, physics, and astronomy were represented.

During the month of January, the eight Academy-Research Council Divisional Committees reviewed and appraised the qualifications of applicants for postdoctoral fellowships. These Committees recommended finalists who were considered by a Postdoctoral Evaluation Board at its meeting on February 23.

The final selection of Fellows was made by the National Science Foundation on March 15. There were 715 graduate fellowships and 70 post-graduate fellowships awarded for the academic year 1955-56.

ADVISORY COMMITTEE ON CIVIL DEFENSE

The newly formed Advisory Committee on Civil Defense held its first meeting on February 11 at the Carnegie Institution of Washington. Governor Val Peterson, Administrator of the Federal Civil Defense Administration (FCDA) and others briefed the members on civil defense affairs. The principal work of the Committee is to assist the FCDA with the preparation of plans and policies based on a solid technical foundation. The first study "A Proposed Evacuation-Shelter Policy" has already been delivered to Governor Peterson, and his staff is reviewing this policy statement now and preparing it for final release.

The Advisory Committee appointed by the Academy-Research Council is composed of the following members:

MERLE A. TUVE, Carnegie Institution of Washington, *Chairman*
GERHARD D. BLEICKEN, John Hancock Mutual Life Insurance Company
HERBERT M. BOSCH, University of Minnesota
EUGENE P. CRONKITE, Brookhaven National Laboratory
D. M. DENNISON, University of Michigan
RICHARD M. EMBERSON, Associated Universities, Inc.
E. H. HOLMES, U. S. Bureau of Public Roads
CARL KAYSEN, Harvard University
RENSIS LIKERT, University of Michigan
R. B. ROBERTS, Carnegie Institution of Washington
HERBERT SCOVILLE, JR., Department of Defense
LAURISTON S. TAYLOR, National Bureau of Standards.

SCIENTIFIC AND TECHNICAL SOCIETIES

The sixth edition of "Scientific and Technical Societies of the United States and Canada" will be ready for distribution about May 15. The first edition of this directory appeared in 1927. The information contained in the new edition was received from the societies between July and December 1954, with information about officers for 1955 inserted on the proofs.

The United States section of the book, compiled in the Academy-Research Council Library, includes over 1,500 organizations; and the Canadian section, compiled by the National Research Council of Canada, includes 206 organizations.

The information included follows the

plan of former editions. The indexes for both sections are by subjects; names of research funds, medals, prizes, etc.; names of periodical publications; and by changes of names of societies renamed since 1948.

SYMPOSIUM ON COLORED AERIAL PHOTOGRAPHY

A symposium on "Colored Aerial Photography as Applied to the Earth Sciences" was held at the Academy-Research Council building on January 25. Organized and sponsored jointly by the Division of Earth Sciences and the American Society of Photogrammetry, the symposium was open to the public. The main speakers and the titles of their papers are as follows: "Color Photography from the Photo Interpreter's Standpoint," by Robert N. Colwell, University of California; "Color Photography from the Color Physicist's Standpoint," by John C. Schleiter, National Bureau of Standards; and "Color Photography from the Film Manufacturer's Standpoint," by Raife C. Tarkington, Eastman Kodak Research Laboratories.

VISIT TO THE HIGHWAY RESEARCH BOARD

On February 16, the Highway Research Board was host to a delegation of 32 Government and business leaders from Switzerland who were making a survey of American expressways. Fred Burggraf, Director of the Board, welcomed the visitors on behalf of the Academy-Research Council and reviewed briefly the origin and purposes of the parent organization and the functional operation of the Board in the general field of highway research in this country. Officials from the U. S. Bureau of Public Roads described the research and financial studies behind the President's highway program.

The delegation was appointed to examine the highway problems of Switzerland. The trip to the United States was arranged by the International Road Federation to permit the group to study American developments and practices, particularly highway capacity, economics of new highway construction, safety, financing, and elements of highway design.

RECORD OF MEETINGS

January

- 4 Highway Research Board, Award Committee
Nuclear Data Seminar
- 5-6 Committee on International Exchange of Persons
- 6 American Geological Institute, Executive Committee
Materials Advisory Board
- 7 Federal Construction Council, Industry-Advisory Committee for Building Display
- 7-8 Committee on Geography, Advisory to ONR
- 8 Committee on Developmental Biology, *New York City*
- 10-14 Highway Research Board, Annual Meeting
- 11 Subcommittee on Oncology
- 12 Panel on Lithium
- 13 Subcommittee on Dyeing Wool Type Fabrics (AG Shade 44), *Natick, Mass.*

January

- 13 Ship Structure Committee
- 13-14 Screening Committee for Postdoctoral Fellowships in Biology and Agriculture, *Bethesda, Md.*
- 15-16 Screening Committee for Postdoctoral Fellowships in Chemistry
- 17 Committee on Growth
- 18 Committee on Applications of Mathematics, *New York City*
Nuclear Data Seminar
Subcommittee on Food Stability, *Chicago*
- 19 Subcommittee on Shock and Panel on Plasma, Joint Meeting
Ad hoc Panel on the Establishment of a Hemoglobin Standard
Food Protection Committee
Food Protection Committee and Industrial Liaison Panel, Joint Meeting

January		February	
19	Subcommittee on Radiation Sterilization, <i>Chicago</i>	7	Committee on Ship Steel, Project Advisory Committee SR-139
20	Subcommittee on Blood and Related Problems	8	Panel on Lower Extremity Research and Development, <i>Los Angeles</i>
	Subcommittee on Blood and Related Problems, Executive Session		Panel on Upper Extremity Research and Development, <i>Los Angeles</i>
	Ship Structure Subcommittee and Committee on Ship Structural Design, Joint Meeting	9-10	Committee on Ship Steel
21	Committee on Ship Structural Design	11	Committee on Radiology
	Panel on Sterilization of Blood and Plasma		Subcommittee on Food Supply
21-22	Committee on Naval Medical Research, <i>Panama City, Fla.</i>	11-12	Advisory Board on Quartermaster Research and Development, Committee on Pioneering Research, <i>Natick, Mass.</i>
	Committee on Drug Addiction and Narcotics, <i>Lexington, Ky.</i>	12	Committee on Psychiatry
22	Screening Committee for Postdoctoral Fellowships in Anthropology and Psychology	12	Division of Earth Sciences, Executive Committee
22-23	Screening Committee for Postdoctoral Fellowships in Mathematics	12-13	Committee on International Relations in Psychology
24	Federal Construction Council, Task Group T-12 (Failures in Built-up Roofs)	12-13	Committee on Disaster Studies, <i>Poughkeepsie, N. Y.</i>
25	Subcommittee on Field Sleeping, <i>Natick, Mass.</i>	13	National Academy of Sciences-National Research Council, Governing Board
	Institute of Animal Resources	14	International Conference on the Use of Antibiotics in Agricultural Production, Planning Committee
	Symposium on Colored Aerial Photography as Applied to Earth Sciences	14	Subcommittee on Personnel and Training
26	Screening Committee for Postdoctoral Fellowships in the Medical Sciences	16	Federal Construction Council, Task Group T-16 (Packaged Air Conditioners)
	Panel on Reinforced Plastics for Aircraft Structures	17	Subcommittee on Fruit and Vegetable Products, <i>Chicago</i>
27	Panel on Venereal Diseases	18	Civil Defense Foods Advisory Committee
	Committee on Cancer Diagnosis and Therapy	18-19	Committee on Astronomy, Advisory to ONR
27-29	Committee on Army Medical Education, <i>San Antonio, Tex.</i>	19	Subcommittee on Shelter and Clothing
28	Building Research Institute, Membership Committee	21	National Science Foundation, Graduate Screening Panel Chairmen
	Committee on Handbook of Biological Data, Executive Committee	22	Highway Research Board Executive Committee and American Association of State Highway Officials
	Agricultural Board, Executive Committee, <i>Chicago</i>	22-24	Executive Committee, Joint Meeting
29-31	Screening Committee for Postdoctoral Fellowships in the Physical Sciences	23	National Science Foundation, Graduate Screening Panels
31	Committee on Plastics and Elastomers, <i>Natick, Mass.</i>	23	National Science Foundation, Postdoctoral Fellowships Evaluation Board
February		24	Subcommittee on Radiation Sterilization, <i>Cambridge, Mass.</i>
1	Subcommittee on Adhesives, <i>Natick, Mass.</i>	24	Federal Construction Council, Task Group T-15 (Plumbing Research)
	Nuclear Data Seminar	25	National Science Foundation, Final Graduate Fellowship Board
2	Committee on the National Atlas	25-27	Committee on Growth, Section on Fellowships
	Building Research Institute, Program Committee	26	Committee on Atomic Casualties
3	Committee on Containers, <i>Chicago</i>	28	Committee on Growth, Executive Committee
	Subcommittee on Anesthesia		Committee on Medicine and Surgery
4	Technical Committee on Prosthetics, <i>Los Angeles</i>		Division of Medical Sciences, Executive Committee

COOPERATING SOCIETIES

The following schedule of meetings of Societies cooperating with the National Research Council was prepared by the Librarian of the Academy-Council from information supplied by the Societies. For details regarding a specific meeting, please write directly to the Society Secretary.

January

- Institute of the Aeronautical Sciences, *New York City*
- Society of Automotive Engineers, *Detroit, Mich.*
- 13 American Genetic Association, *Washington, D. C.*
- 17 American Institute of Consulting Engineers, *New York City*
- 24-27 American Meteorological Society, *New York City*
- 24-27 American Society of Heating and Air-Conditioning Engineers, *Philadelphia, Pa.*
- 27-29 American Physical Society, *New York City*
- 31-Feb. 4 American Institute of Electrical Engineers, *New York City*

February

- 14-17 American Institute of Mining and Metallurgical Engineers, *Chicago, Ill.*
- 14-17 Society of Economic Geologists, *Chicago, Ill.*

March

- 7-9 American Society of Photogrammetry, *Washington, D. C.*
- 9-11 American Congress on Surveying and Mapping, *Washington, D. C.*
- 14 Wildlife Society, *Montreal, Canada*
- 28-31 American Association of Petroleum Geologists, *New York City*
- 28-31 Society of Economic Paleontologists and Mineralogists, *New York City*
- 29-April 7 American Chemical Society, *Cincinnati, Ohio*

April

- 4-6 American Academy of Pediatrics, *Detroit, Mich.*
- 4-6 American Astronomical Society, *Princeton, N. J.*
- 6-8 American Association of Anatomists, *Philadelphia, Pa.*

April

- 7-9 American Association of Pathologists and Bacteriologists, *Houston, Texas*
- 10-15 American Association of Immunologists, *San Francisco, Calif.*
- 10-15 American Institute of Nutrition, *San Francisco, Calif.*
- 10-15 American Physiological Society, *San Francisco, Calif.*
- 10-16 American Society for Experimental Pathology, *San Francisco, Calif.*
- 10-16 American Society for Pharmacology and Experimental Therapeutics, *San Francisco, Calif.*
- 11-14 Association of American Geographers, *Memphis, Tenn.*
- 11-15 American Society of Biological Chemists, *San Francisco, Calif.*
- 24-28 American Ceramic Society, *Cincinnati, Ohio*
- 25-29 American College of Physicians, *Philadelphia, Pa.*
- 27-29 American Surgical Association, *Philadelphia, Pa.*
- 28-30 American Physical Society, *Washington, D. C.*
- 29-30 Seismological Society of America, *Berkeley, Calif.*

May

- 2 American Society for Clinical Investigation, *Atlantic City, N. J.*
- 2-4 American Geophysical Union, *Washington, D. C.*
- 2-5 Electrochemical Society, *Cincinnati, Ohio*
- 3-5 Association of American Physicians, *Atlantic City, N. J.*
- 4-6 American Meteorological Society, *Washington, D. C.*
- 8-13 Society of American Bacteriologists, *New York City*
- 9-13 American Psychiatric Association, *Atlantic City, N. J.*
- 19-20 Society of Naval Architects and Marine Engineers, *Philadelphia, Pa.*
- 25-26 American Iron and Steel Institute, *New York City*

June

- American Society of Ichthyologists and Herpetologists, *San Francisco, Calif.*
- American Society of Mammalogists, *Los Angeles, Calif.*
- 6-10 American Medical Association, *Atlantic City, N. J.*
- 8-10 American Meteorological Society, *Kansas City, Mo.*
- 13-15 American Neurological Association, *Chicago, Ill.*
- 15-18 Society for Pediatric Research, *Quebec, Canada*
- 20-24 American Society for Engineering Education, *State College, Pa.*
- 21-23 American Meteorological Society, *Pasadena, Calif.*
- 22-24 American Physical Society, *Toronto, Canada*
- 26-July 1 American Society for Testing Materials, *Atlantic City, N. J.*
- 27-July 1 American Institute of Electrical Engineers, *Swampscott, Mass.*
- 28-July 1 American Crystallographic Association, *Pasadena, Calif.*
- 30-July 2 Acoustical Society of America, *State College, Pa.*

August

- Poultry Science Association, *East Lansing, Mich.*
- 15-18 American Veterinary Medical Association, *Minneapolis, Minn.*
- 15-19 American Institute of Electrical Engineers, *Butte, Montana*
- 15-19 American Society of Agronomy, *Davis, Calif.*

September

- American Society of Plant Physiologists, *East Lansing, Mich.*
- Botanical Society of America, *East Lansing, Mich.*
- Genetics Society of America, *East Lansing, Mich.*
- 2-7 American Psychological Association, *San Francisco, Calif.*
- 5-7 Mycological Society of America, *East Lansing, Mich.*
- 7-9 American Society for Horticultural Science, *East Lansing, Mich.*
- 5-9 American Physiological Society, *Boston, Mass.*
- 11-18 American Chemical Society, *Minneapolis, Minn.*
- 12-16 Illuminating Engineering Society, *Cleveland, Ohio*
- 12-16 Instrument Society of America, *Los Angeles, Calif.*

September

- 13-15 American Meteorological Society, *Asbury Park, N. J.*
- 20-23 American Roentgen Ray Society, *Chicago, Ill.*

October

- 3-6 American Academy of Pediatrics, *Chicago, Ill.*
- 3-6 Society of Exploration Geophysicists, *Denver, Colo.*
- 3-7 American Institute of Electrical Engineers, *Chicago, Ill.*
- 4-6 American Meteorological Society, *Stillwater, Okla.*
- 6-8 Optical Society of America, *Pittsburgh, Pa.*
- 17-20 American Dental Association, *San Francisco, Calif.*
- 17-21 American Society of Civil Engineers, *New York City*
- 20 Engineering Foundation, *New York City*
- 31-Nov. 4 American College of Surgeons, *Chicago, Ill.*

November

- 7-9 Geological Society of America, *New Orleans, La.*
- 7-9 Mineralogical Society of America, *New Orleans, La.*
- 7-9 Society of Economic Geologists, *New Orleans, La.*
- 9-12 Society of Naval Architects and Marine Engineers, *New York City*
- 14-18 American Public Health Association, *Kansas City, Mo.*
- 15-17 American Meteorological Society, *Honolulu, T. H.*
- 23-26 Institute of Traffic Engineers, *Pittsburgh, Pa.*
- 27-30 American Institute of Chemical Engineers, *Detroit, Mich.*
- 29-Dec. 2 Entomological Society of America, *Cincinnati, Ohio*

December

- 26 Biometric Society, Eastern North America Region, *New York City*
- 28-30 American Phytopathological Society, *Atlanta, Ga.*

NEW PUBLICATIONS

Atlas of Tumor Pathology. Section IV, Fasc. 11. *Tumors of the Major Salivary Glands*, by Frank W. Foote, Jr., and Edgar L. Frazell. Washington, Armed Forces Institute of Pathology. 1955. 149 p.

Laboratory Analysis of Soils: Grain Size and Liquid Limit. Highway Research Board Bulletin No. 95. Academy-Council Publication No. 343. 1955. 37 p. \$0.60.

Load-Carrying Capacity of Frost-Affected Roads. Highway Research Board Bulletin No. 96. Academy-Council Publication No. 344. 1955. 23 p. \$0.45.

Meteorologic and Oceanographic Analysis of the Passage of the SS Warrior, by Louis Allen. A Supplement of "The SS Warrior" study. November 1954. 21 p.

Nutrient Requirements for Rabbits. Nutrient Requirements for Domestic Animals No. IX. Academy-Council Publication No. 331. 1954. 12 p. \$0.50.

Principles and Procedures for Evaluating the Safety of Intentional Chemical Additives in Foods. Food Protection Committee. [8 p. Leaflet. 1955.]

Radiation Biology. v. 2. *Ultraviolet and Related Radiation.* Alexander Hollaender, ed. McGraw-Hill. 1955. 593 p. \$8.00.

Report of the Committee on Marine Ecology as Related to Paleontology, 1941-42. Report No. 2. Reprinted January 1955. 58 p. \$0.50.

SS Warrior. An Analysis of an Export Transportation System From Shipper to Consignee. Academy-Council Publication No. 339. Maritime Cargo Transportation Conference, November 30, 1954. 53 p., 8 illus. \$1.00.

Survey Report on Human Factors in Undersea Warfare. Supplement 2. Reprint of four parts prepared in 1949. Previously classified. Committee on Undersea Warfare. 1954. 94 p. \$0.75.

Note: A *Cumulative Index to Volumes I-IV, 1950-1954, of News Report* (12 p., mimeographed) has been compiled in the Library of the Academy-Research Council. Copies may be obtained on request from the Library.

Notice of Academy Meetings

NATIONAL ACADEMY OF SCIENCES

Annual Meeting, Washington, D. C., April 25-27, 1955

Autumn Meeting, California Institute of Technology, November 2-4, 1955

NATIONAL ACADEMY OF SCIENCES—NATIONAL RESEARCH COUNCIL

Governing Board, Washington, D. C., April 24, 1955

Governing Board, Washington, D. C., June 19, 1955

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